NZFOA FOREST BIOSECURITY RESEARCH STRATEGY

Protecting Our Plantation Forests And The Export Trade From Biosecurity Threats

www.nzfoa.org.nz

FOREST OWNERS ASSOCIATION

CONCLUSION FROM LAST YEAR

- Biosecurity risks to forests are very significant, but…
- The BIG risk is to Trade.
- Researchers have been good at finding problems.
- Need much greater effort on solutions.
- But who is going to pay?

FOREST OWNERS ASSOCIATION

PURPOSE OF THE NEW RESEARCH STRATEGY

To identify biosecurity and forest health issues that are important to industry, and mechanisms to address these issues.

This includes determining where industry's research priorities lie and the level of resourcing appropriate to manage these priorities.

FOREST OWNERS ASSOCIATION

WHY A NEW RESEARCH STRATEGY?

- Forest biosecurity is extremely important to industry.
- The existing Forest Biosecurity Research Strategy is five years old but research has not led to many solutions with regard to foliar diseases.
- Progress slow due to the structure and mechanism to deliver solutions, and also the capability to work on solutions.
- Currently considerable duplication exists in industry structure.
- More industry funding should occur, but only based on a sound business case approach.
- The Strategy provides a plan to get on top of the issues!

FOREST OWNERS ASSOCIATION

BIOSECURITY RESEARCH

2002 – Northland
Strasseria Defoliation and Cylcaneusma

GOALS

Goals of the Strategy:

1. Protecting radiata pine and other important commercial plantation species, including Douglas-fir, from pests and diseases and achieving greater productivity with no loss in quality.
2. Protecting the log trade and other wood exports from biosecurity threats that might lead to trade bans.

OBJECTIVES

Key Objectives of the Strategy Include:

1. Development of solutions to disorders, with high priority to foliar disorders, that threaten forest health and forest products trade.
2. Development of improved solutions for safe log trade – e.g., fumigation treatments.
3. Development of a new industry forest biosecurity research structure to direct research cost effectively and focus on outcomes.

CURRENT BIOSECURITY RISK SITUATION

- Radiata pine productivity loses in the order of $150M/yr caused by major fungal pests.
- Dothistroma spraying costs in the order of $2M/year.
- Radiata pine needle disorders (PNB and RNC) caused by unknown agents/causes.
- Douglas-fir – Swiss Needlecast – 20% productivity loss.
- Increasing threat to forests from Phytophthoras – e.g., DFP - Chile; kauri PTA; Kernoviae – UK; SOD – USA.
- Improving diagnostics – increasing detection of organisms.
- World-best forest health surveillance and border biosecurity.
- All seed orchards are in the South Island.

FOREST OWNERS ASSOCIATION

CURRENT RISK SITUATION - LOGS

- 10 million m^3/year to 10 countries.
- Potential for log trade “biosecurity” interruption.
- Chile trade issues – Korea and Australia – DFP.
- NZ trade issues – Australia – kernoviae.
- Nectria a US$10billion threat to forests and trade (Scion publication).
- Methyl bromide to be phased out.
- Phosphine alternative but not as effective.

FOREST OWNERS ASSOCIATION

CURRENT RESEARCH FUNDING

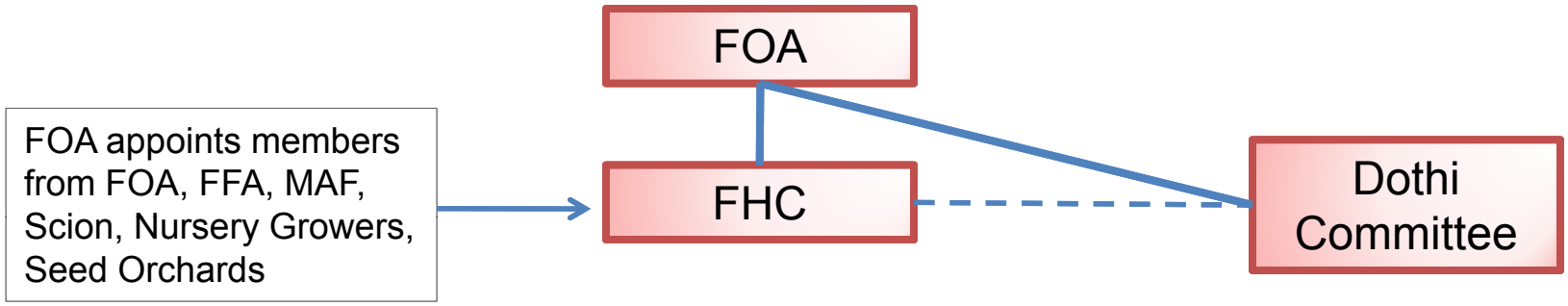
- Govt – primarily through FRST (PGST) – invests about $3.5M into Forest Biosecurity Research and industry about $0.5M/year.
- Most of the investment is into Scion's Forest Health Group with additional funding into the Bioprotection programme and also Massey University (Rosie Bradshaw).
- The Bioprotection programme is the Centre of Excellence in Plant Bioprotection centered at Lincoln University. The Forestry objective includes researchers from Lincoln, AgResearch, Massey, Scion, Plant & Food, and private companies.
- Relatively small amounts of funding invested into applied research to foliar disease solutions.

CURRENT RESEARCH EFFORT - ANALYSIS

- Considerable funding (especially Government) - $4M to Forest Biosecurity plus $6M/yr (Govt) to Better Border Biosecurity (which covers all primary sectors).
- Industry funding relatively low.
- NZ well resourced to diagnose and respond to incursions.
- Some excellent fundamental research on Dothistroma at Massey University – may lead to solutions.
- Relatively very little applied research effort on solutions to foliar diseases in forests, although research on improving understanding.

FOREST OWNERS ASSOCIATION

FOA – FOREST HEALTH COMMITTEE

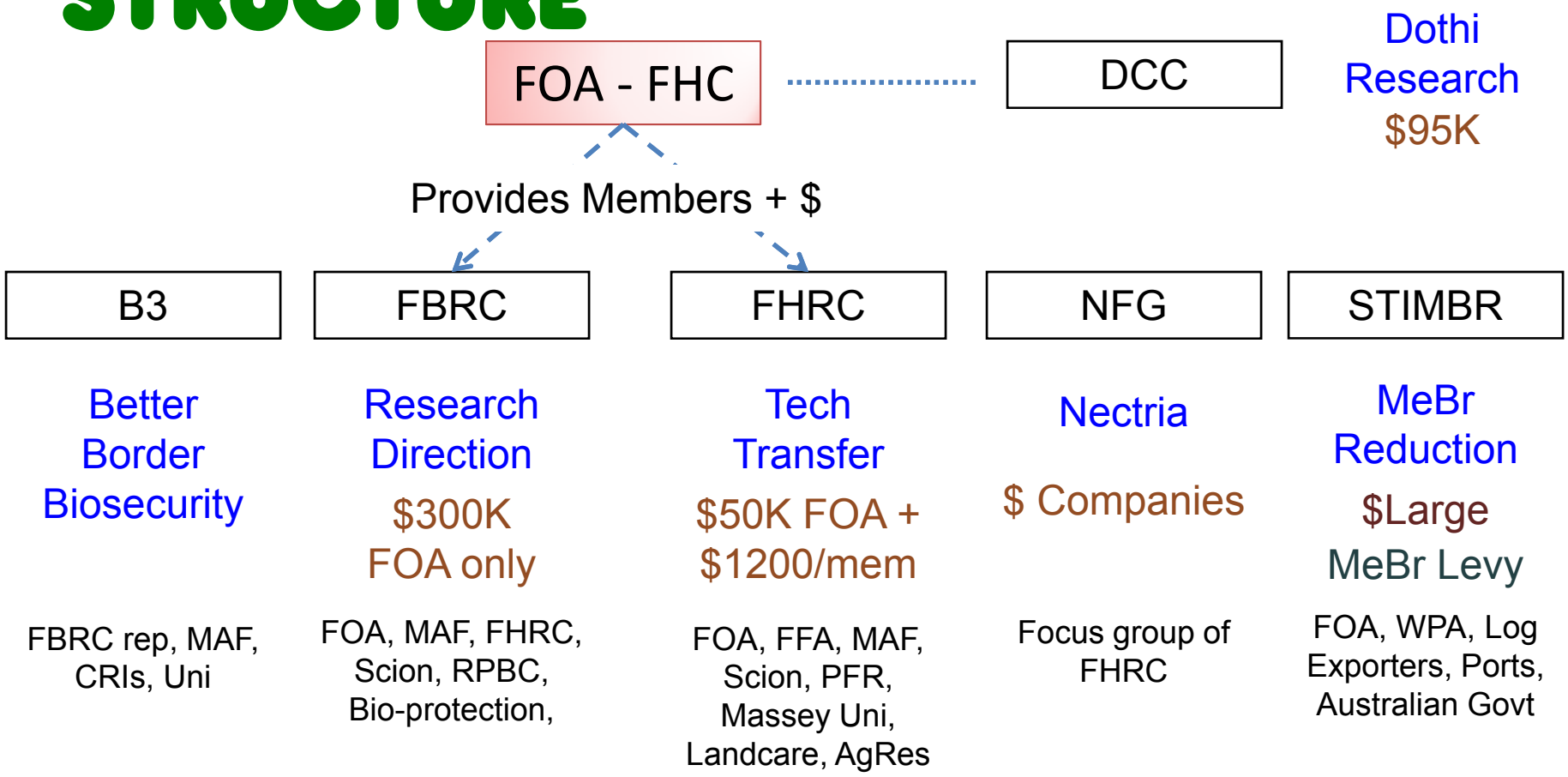


- Forest Health Survey incl diagnostics, database, communication
- Forest Condition Monitoring
- Incursion Response Preparedness
- Input to MAF Policy
- Liaison with MAF/BNZ
- Input to R&D Priorities

- Copper purchase
- Spray programme

FOREST OWNERS ASSOCIATION

CURRENT FOREST/LOG BIOSECURITY RESEARCH STRUCTURE



FOREST OWNERS ASSOCIATION

RESEARCH OPPORTUNITIES

- Focus on solutions to problems and potential threats, to reduce growth losses, enhance productivity, increase profitability, and protect the log trade.
- Balance of near-term vs long-term.
- Enhanced resistance to diseases (especially foliar) – existing and threatening.
- Beneficial organisms as a tool – e.g., endophytes.
- Genetic technologies/genomics to explore how the pathogen(s) and trees interact at the molecular level.
- Genetic modification as a potential future tool.
- Tree breeding.
- Metabolic profiling for selection.
- Log treatment technology – fumigation and alternatives.

FOREST OWNERS ASSOCIATION

MAINTAINING CAPABILITY

- Diagnostic and response capability important.
- Responding to Government-Industry readiness needs, such as critical information on high priority pests and possible treatment technologies etc.

FOREST OWNERS ASSOCIATION

CHANGE IN COMMITTEE STRUCTURE

1. Rename FHC as FBC (Forest Biosecurity Committee).
2. Research Manager to be contracted by FOA and report to Chairman of FBC to drive delivery of priority projects.
3. FBC to also ensure delivery of lower priority projects and to function as the technology transfer facilitator.
4. FBRC and FHRC to disappear. Other committees to have more formal reporting to FBC, e.g., DCC, NFG (& STIMBR?).
5. Formal process, through FOA, to be developed to link FBC with FFR, RPBC and SWI.
6. FBC to develop a process for defining key research priorities.
7. FBC to work with research providers to leverage Govt funds with industry funds and develop projects to deliver on key priorities.
8. Operating principles to be developed.

FOREST OWNERS ASSOCIATION

RESEARCH FUNDING POSSIBILITIES

- Funding based on business case with performance milestones.
- Increase to $0.xx/ha – based on merit or perhaps.
- Have a set minimum levy and a mechanism to increase (this would fit with the Govt to Industry initiative, where urgent research might be required on a new incursion).
- Projects focused on delivery.
- End-user input to FRST funding allocation and ongoing management.
- Primary Growth Partnership opportunities.

FOREST OWNERS ASSOCIATION

TECHNOLOGY TRANSFER - PROPOSED

- Continue with annual FOA/MAF Forest Biosecurity workshop.
- FBC to be responsible for knowledge transfer to industry - possibly through FFR.
- FBC to have a budget to facilitate this.
- FBC to work with research providers to ensure knowledge transfer mechanisms work – i.e., appropriate delivery by audience.
- A goal may be to raise the awareness of biosecurity threats in order to increase funding of possible solutions.

RESEARCH PRIORITIES

- Development of solutions to foliar disorders, that threaten forest health and forest products trade.

Note:

- It's recognised that STIMBR will continue to take a lead in fumigation technology developments – perhaps with reporting to FBC.
- Other areas of Forest Biosecurity research are also important but just not as high a priority as the above.

RESEARCH PRIORITIES – SCION SURVEY

Scion conducted a survey of forestry companies and came up with the following research priorities:

Priority 1

1. Market access and methyl bromide issues.
2. Needle disease initiatives.

Priority 2

1. Nectria.
2. Germplasm movement.
3. Surveillance issues.

Priority 3

1. Miscellaneous: including Hylastes, pesticide reduction, sapstain, field guide production.
2. Alternative species strategy and funding.

FOREST OWNERS ASSOCIATION

NEXT STEPS

- FOA agree Biosecurity Research Strategy and structures to manage the research.√√
- FOA appoint Forest Biosecurity & Growing R&D Manager √√
- Workshop to develop research projects. √
- Work with Govt-funded research providers to redirect govt funds to priority projects.
- Researcher projects content, milestones and time lines agreed with researchers.
- Industry monitors research and pays on results.
- Research modified as results become known.
- Collaborative effort between researchers and industry (Industry expectations need to be managed).

FOREST OWNERS ASSOCIATION

CONCLUDING REMARKS

- This strategy is based on industry input.
- Industry becoming impatient for solutions to foliar disease problems and increased research focus on this issue would address many concerns.
- Administration costs expected to increase slightly.
- Research funding to be linked to quality proposals and delivery of results.
- Industry expectations need to be realistic.

FOREST OWNERS ASSOCIATION

SOLUTIONS TO FOLIAR DISEASES OF RADIATA PINE

Research Ideas Workshop

15th February 2011

FOREST OWNERS ASSOCIATION

OBJECTIVE

- To hold an informal workshop to discuss potential research projects that could lead to solutions to foliar diseases of radiata pine.

FOREST OWNERS ASSOCIATION

MAIN OUTCOMES

- Opportunities for a PGP bid on productivity – including GE identified.
- Opportunities to enhance resistance of radiata pine using beneficial organisms identified.
- Need to continue to screen and test chemicals for effectiveness against new and existing needle diseases.
- FOA to discuss next steps.

FOREST OWNERS ASSOCIATION